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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Tatsuya Hayashi

JCLA16588

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05/26/2010

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EXAMINER

JOYCE, WILLIAM C

ART UNIT

PAPER NUMBER

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/531,519	Applicant(s) HAYASHI ET AL.	
	Examiner William C. Joyce	Art Unit 3656	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 November 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) 5 and 8 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 6 and 7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|-------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This Office Action is in response to the amendment filed November 30, 2009 for the above identified patent application.

Election/Restrictions

1. Newly amended claims 5 and 8 directed to an invention that is independent or distinct from the invention originally claimed for the following reasons: Claims 1 and 5 are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make another and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case, the bearing of claim 1 can be made without forming a tapered dynamic pressure generating groove area, as defined in claim 5.

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claims 5 and 8 are withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 2, 6, and 7 are rejected under 35 U.S.C. 102(b) as being anticipated by Inoue et al. (USP 6,435,721).

Inoue et al. illustrates a hydrodynamic bearing device comprising: an axial member (13) having a first thrust surface (13b); and a second thrust surface (14a) opposed to the first thrust surface of the axial member in an axial direction, a dynamic pressure generating groove area being formed in one of the first thrust surface and the second thrust surface (Figure 2), the dynamic pressure generating groove area having a plurality of dynamic pressure generating grooves and ridges, an action of dynamic pressure of a fluid generating a pressure in a thrust bearing clearance between the first thrust surface and the second thrust surface to support the axial member in the axial direction in a non-contact manner, wherein the dynamic pressure generating groove area is formed with a difference in height obtained by subtracting a height of an outer peripheral edge of a surface of the dynamic groove area from that of an inner peripheral edge thereof is equal to 0, wherein the first thrust surface is formed with recessed inner surface surrounded by the inner peripheral edge of the dynamic

Art Unit: 3656

pressure generating groove area (Figure 1), wherein the recessed inner surface area is lower in height than an innermost one of the ridges.

The method limitation of forming the thrust member by a pressing operation has been given limited patentable weight. An apparatus claim must define over the prior art in terms of structure and not the method steps used in forming the device.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Alternatively, claims 1, 2, 6, and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Inoue et al. (USP 6,435,721) in view of Ishikawa (JP 2000-120664).

Inoue et al. discloses a hydrodynamic bearing device comprising: an axial member (13) having a first thrust surface; and a second thrust surface opposed to the first thrust surface of the axial member in an axial direction, a dynamic pressure generating groove area being formed in one of the first thrust surface and the second thrust surface, the dynamic pressure generating groove area having a plurality of dynamic pressure generating grooves, an action of dynamic pressure of a fluid generating a pressure in a thrust bearing clearance between

Art Unit: 3656

the first thrust surface and the second thrust surface to support the axial member in the axial direction in a non-contact manner, wherein the first thrust surface is formed with recessed inner surface surrounded by the inner peripheral edge of the dynamic pressure generating groove area (Figure 1), wherein the recessed inner surface area is lower in height than an innermost one of the ridges.

Inoue et al. does not appear to disclose the limitation defining the thrust member having a difference in height obtained by subtracting a height of an outer peripheral edge of a surface of the dynamic groove area from that of an inner peripheral edge thereof. The prior art to Ishikawa teaches a thrust member (7) having a difference in height obtained by subtracting a height of an outer peripheral edge of a surface of the dynamic groove area from that of an inner peripheral edge thereof. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the thrust member of Inoue et al. with a thrust surface having the claimed height difference, as taught by Ishikawa, motivation being to provide stable rotation of the bearing arrangement.

6. Claims 1-4, 6, and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Inoue et al. (USP 6,435,721) in view Mori et al. (USPub 2002/0025089).

Inoue et al. discloses a hydrodynamic bearing device comprising: an axial member (13) having a first thrust surface; and a second thrust surface opposed

Art Unit: 3656

to the first thrust surface of the axial member in an axial direction, a dynamic pressure generating groove area being formed in one of the first thrust surface and the second thrust surface, the dynamic pressure generating groove area having a plurality of dynamic pressure generating grooves, an action of dynamic pressure of a fluid generating a pressure in a thrust bearing clearance between the first thrust surface and the second thrust surface to support the axial member in the axial direction in a non-contact manner, wherein the first thrust surface is formed with recessed inner surface surrounded by the inner peripheral edge of the dynamic pressure generating groove area (Figure 1), wherein the recessed inner surface area is lower in height than an innermost one of the ridges.

Inoue et al. does not appear to disclose the limitation defining the thrust member having a difference in height obtained by subtracting a height of an outer peripheral edge of a surface of the dynamic groove area from that of an inner peripheral edge thereof is between or equal to 0 and 2 μm . The prior art to Mori et al. teaches a thrust member (7) having a flatness of .0005 mm or less (section 0027). Mori et al. clearly identifies the importance of forming the thrust member with a very flat thrust surface. Ideally, it is understood from Mori et al. that a thrust surface having a flatness of 0 is ideal. Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the thrust member of Inoue et al. with a thrust surface having a flatness of

Art Unit: 3656

0, as taught by Ishikawa, motivation being to provide stable rotation of the bearing arrangement.

7. Claims 3 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Inoue et al. (USP 6,435,721) alone, or in view of Ishikawa (JP 2000-120664), as applied to claim 1 above, in further view of Mori et al. (USPUB 2002/0025089).

Mori et al. teaches forming a thrust surface with a roughness Ra of .04 μm or less (claim 17). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the thrust surface of Hagiwara with a roughness Ra of .04 μm or less, as taught by Mori et al., motivation being to provide smooth rotation and minimize wear of the bearing arrangement.

Response to Arguments

8. Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to William C. Joyce whose telephone number is (571) 272-7107. The examiner can normally be reached on Monday - Thursday 7:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Ridley can be reached on (571) 272-6917. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 3656

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/William C. Joyce/
Primary Examiner, Art Unit 3656